public interest obligation to ensure that Americans are not casualties in the battle of technical giants for supremacy of a particular proprietary approach. Thus, adoption of the ATSC Standard is well within the appropriate functions of a limited federal government, devoted to a marketplace philosophy, and balancing the rights and needs of both citizens and industry.

c. ***Adoption of the ATSC Standard Keeps Faith with a Long and Complex Industry-Government Process***. The ATSC Standard for broadcast transmission is the recommendation of a properly constituted Advisory Committee, serving four FCC administrations over eight years. The Standard represents a strong consensus—affirmed by the unanimous recommendation by ACATS—that reflects agreement among all parties without compromising the technical integrity or multi-media neutrality and utility of the Standard.

The FCC set the agenda for ACATS, accepted without objection all interim reports, approved early findings and recommendations, and was actively involved in setting goals (*e.g.* channel size, spectrum allocations, digital technology 'second to none', interoperability, HDTV and SDTV, etc.) and timetables (*e.g.* issuing draft channel plans, rules on operation and transition, etc.).

The industry—including most importantly the ATV system proponents—provided all technical proposals, full funding for systems development, testing and evaluation, and the hundreds of staff who led study

committees and working groups under a volunteer Chairman.

Were the government to fail to act at all or defer action on the Standard Recommendation, it would send a powerful signal about future cooperation and trustworthiness of government.

d. ***Adoption Confirms an Open Standard, Openly Arrived At.*** The broadcast transmission standard was the product of nearly fifteen years of concerted discussion in U.S. technical standards bodies. The recommended ATSC Standard went though this open process, and then through the further vetting of the FCC's ACATS.

No one who wished to participate in either forum was excluded, or was unable to provide input and recommendations, or to make the case for or against a particular proposal. Indeed, through its Technical Subgroup and several subsidiary Working Groups reporting to it, the design of the original Grand Alliance system proposal was fundamentally altered by ACATS, based on continuing input from a variety of broadcast, computer, manufacturing, and production interests (*e.g.* to achieve full MPEG-2 compression and transport compliance, interoperability with other transmission media and techniques, enhanced video scanning formats with square pixels, etc.).

Far from restraining future innovation, the flexible digital broadcast standard arguably will provide the incentive to invent and enhance because of its underlying 'neutral' character. It is not 'old' technology, but the newest,

most practical technology for widespread and durable consumer implementation. The transmission standard describes the nature of the transmitted signal, and contains no restriction on the design extensibility of receiving devices to store, process or redistribute the information transmitted. The transmitted information is coded and packaged in ways which are sympathetic, first, to all the other transmission and processing mechanisms which would handle it, and, second, to the uses to which it might be put, based on detailed input of all those participating in the standards and ACATS processes.

e. The ATSC Standard Will Speed the Transition. One goal of implementing DTV broadcasting, announced by the FCC in 1991, is the return of part of the television broadcast spectrum which now is required for maintaining today's analog television broadcasting. With the increasing interest in shortening the transition time to the new system, so that the current system can be turned off sooner, DTV operations must be launched and reach wide penetration at an extraordinary rate. Thousands of service providers and manufacturers must act early to create and distribute the digital services, and millions of individual Americans must act to acquire receiving units.

With this goal in view, there is no benefit to broadcasting to going slow with the transition. All the scenarios argue for fast implementation: to eliminate 'double' facilities and the related costs and complexity; to

maximize the earliest return on investment; and to encourage consumer attention and loyalty to the DTV service.

The certainty provided by the ATSC Standard to which all will build and supply equipment is the strongest single mechanism to achieving the goals of both government and the broadcasting enterprise. In the real world there must be real investments—predicated on a predictable timetable, yet involving literally millions of players. The government's adoption of the ATSC Standard will provide the necessary confidence to all involved, by ensuring the exclusive use of its neutral, flexible, and extensible architecture.

This is why, at the request of its industry, the European Commission has already issued its binding Directive that a single, digital transmission standard (called 'DVB' for Digital Video Broadcasting) will be used in DBS or cable television transmissions, and why it is also expected to do the same shortly for EC countries' terrestrial transmission.

II. THE IMPORTANCE OF ADOPTING THE ENTIRE ATSC STANDARD

The Coalition wishes to emphasize that Commission's adoption and mandated use of the transmission Standard in its entirety is key to the replacement—in a rapid and fully accessible way—of an existing, vibrant, crucial, nation-wide television enterprise. The importance of broadcast television to the Nation's well-being and to its citizenry is well captured in

this Notice and preceding ones, and in several of the Commissioners' Statements about the NPRM. And it is precisely because all Americans, directly or indirectly, depend heavily in their every-day lives upon the NTSC transmission medium, long slated for replacement by the FCC in its earlier decisions in this ATV Proceeding, that it is appropriate for the Commission to adopt and mandate the entire new Standard in order to support this replacement.

The full Standard will permit immediate deployment of the new television system because its extraordinary flexibility supports consumer and broadcaster entry at varying levels of cost and complexity, where each can chose now, appropriate to his or her needs. With literally thousands of interconnected contributors and users, all of whom must be involved simultaneously for successful roll-out of even the most modest service replacement, the full Standard is the only mechanism which provides the coordination needed.

Therefore, throughout the original replacement period only the full Standard will ensure that all can have access, that users everywhere have, in effect, the simultaneous opportunity to experience and embrace the new system, and that there is a level playing field for continued competition. And, as the implementation proceeds, only the full Standard will support in this universally accessible way, both on-going improvements and additional information services as they evolve.

The primary inducements to consumers to make the switch to the ATSC Standard, of course, will be the appeal of the new HDTV and clean digital TV pictures and sound, plus the plethora of new services which will undoubtedly flow from this all-digital system with unmatched computer interoperability. But the mandated, singular, nation-wide nature of the full Standard will also offer the media-sophisticated American public one more assurance that they are buying into an on-going system which will not falter for want of geographic scope, equipment compatibility, or anticipated technical obsolescence.

Indeed, even though Americans generally have not yet had the chance to experience HDTV, already there are indications of strong consumer interest. An article published in "Broadcasting & Cable Magazine" (December 5, 1994) reported on a poll by Marquest Research about "21 new and proposed media services or delivery systems" and "17 new or emerging TV programming network formats." The finding was that "HDTV drew the most enthusiasm from consumers" when 54% of respondents—the only over-50%-rating—"ranked HDTV within the top three spots on a 10-point interest scale."

Certainly manufacturers who so avidly competed in the ACATS-sponsored ATV system competition, and those who continued by developing and paying for the Grand Alliance HDTV System, believe in this potential. But, not surprisingly, they and other manufacturers and service providers for

today's NTSC, are loathe to fully promote the new DTV system until they can be confident—based on the FCC's adoption and mandate of the ATSC Standard—that there will be a market to sell to even as consumers are advised that NTSC will soon cease.

Further, the full Standard provides the mechanisms for the new digital television receivers and converters to pass through the content of the signals to those consumers who are able to afford, or only wish to have, the least expensive alternative for continuing their free broadcast television service. It should be remembered that there are many applications for 'television' as we know it today, which only need (or afford) portable and/or small-screen receivers, or simple reception and display without extra control or interactive features. With the full Standard receiver manufactures can still offer such 'low-end' receivers and related devices, whose costs are less than those which would have larger displays, greater functionality, and multiple applications. Again, with rapid replacement of today's equipment in mind, this will help ensure that television receivers remain within economic reach of all Americans and that consumer choice remains paramount in the marketplace.

Finally, with the assurance that the transition to DTV is to occur, based on FCC adoption and mandate of the ATSC Standard, there will be economies of scale in manufacturing and distribution and price efficiencies in receiving and production equipment. Together with the internationally compatible nature of key parts of the ATSC Standard, thus the even wider arena for

distributing start-up and production costs, this will serve to spur early entry to and adoption of the system and will benefit consumers, broadcasters, and manufacturers.

III. THE IMPACT ON AMERICAN JOBS & TRADE OPPORTUNITIES

Some 30,000 U.S. workers are directly involved in the manufacture of consumer TV receivers and related devices. Hundreds of thousands more provide parts, equipment, programming, software, and other support for consumer, professional and industrial television products and services. With the shift to a nation-wide system based on the all-digital ATSC Standard, the broadcast arena will widen to encompass more than the parallel to today's 'television', with a consequent expansion of jobs to design, manufacture and sustain the new system.

Adoption of the Standard and implementation of the new system via allocation and assignment of channels to DTV licensees will invigorate the thousands of companies and organizations, employing Americans in every part of the country, which will design, manufacture and sell equipment for this new system. Tens, if not scores, of billions of dollars of investment, over a decade and more, will be released from all quarters to build an entirely new television and information broadcast distribution system in the U.S.—in fact, throughout North America—which must work for some years in parallel with the existing television system.

Reviewing the list of manufacturers who participated regularly in the engineering and policy studies of ACATS illuminates the strong domestic abilities and interest in the adoption and implementation of the new DTV system. In fact, the two TV receiver manufacturers who today provide the two largest shares of domestically manufactured sets—Thomson Consumer Electronics and Philips Electronics North America Corporation—have publicly pledged to the trade unions employed at their factories in several states that they will build HDTV receivers in those factories. And there are reports in the trade and popular press regularly of new designs, new products, and new or often joint ventures ready to use the ATSC Standard, and ready to supply the vast, near-term, and highly varied demand for products and services to accomplish the conversion to DTV, including HDTV. These include broadcast transmitters, high resolution and large flat-panel displays, new HDTV and SDTV cameras, integrated circuits and microchip processors, and many others.

Inasmuch as the rest of the world is already moving to adopt the all-digital technologies, however, the United States has the opportunity to exploit for international trade purposes, its design sophistication and its own manufacturing and licensing strengths which underlie the ATSC Standard. But this is likely to be successful only if the Commission, as the official U.S. agency responsible for communications matters, adopts and mandates the entire standard, without equivocation, just as parallel official bodies have

already done in Europe and will do elsewhere.

Overseas buyers are intent on getting the best equipment and service for the best price, just as domestic ones are. And part of this competition is the certainty that there is more than one supplier and that the system being purchased has the confidence and full support of those promoting it. Nothing is more confidence-inspiring than the affirmation that the system for sale, and its constituent parts, is going into certain use in the U.S. (and North American) market.

IV. SPEED IS OF THE ESSENCE

With adoption and publication of the basic video standard for DTV by the ATSC over one year ago (April 1995), and with international competitors since then—plus the years before while observing and participating in the FCC-sponsored open U.S. process—it is crucial to have the speediest possible Commission adoption and mandating of the Standard, and allocation and assignment of the channels to DTV licensees.

After so many years of U.S. design leadership, plus official and public statements—including that FCC action would not be taken until the ACATS testing was completed—and anticipation of the new national DTV standard, the longer there remains uncertainty, the harder it will be to take full advantage of the American-based lead and to avoid confusion. Far from

'freezing technology' or 'blocking innovation', however, acting now on the ATSC Standard will serve to promote greater attention to, sales of, and we believe, reliance on the ATSC Standard in this country, and even as the basis for world-wide developments. To some extent it has already has this effect in European and Asian designs, because it emphasizes such flexible architecture and embraces many now-internationally compatible elements.

Therefore, the Coalition appreciates the Commission's fast Comments and Reply Comments schedule in this Notice; and we urge prompt adoption of, and comment periods in, the final NPRM in the matter of DTV channel allotments and assignments.

V. CONCLUSIONS

For the above reasons, the Citizens for HDTV Coalition, on behalf of its members listed below, urges the Commission to adopt the ATSC Standard in its entirety, and to require the sole use of that Standard by DTV licensees.

Also, the Coalition wishes to express its gratitude to the Commissioners and the many members of the FCC staff who contributed to the FCC and ACATS processes of ATV specification, testing, evaluation, and analysis—many since its beginnings in 1987!—and for their commitment to the important work of establishing the basis for America's world-leading DTV broadcast television and information transmission system. We salute the Commission for its tentative decisions in this Notice and for its steadfast

support for this successful public-private process. And we congratulate the FCC Advisory Committee, ably chaired by Richard E. Wiley, as well as the ATSC, ably chaired by James C. McKinney, for their work in bringing forward this extraordinary Standard.

Respectfully submitted,

CITIZENS FOR HDTV COALITION

Peter M. Fannon, Chairman

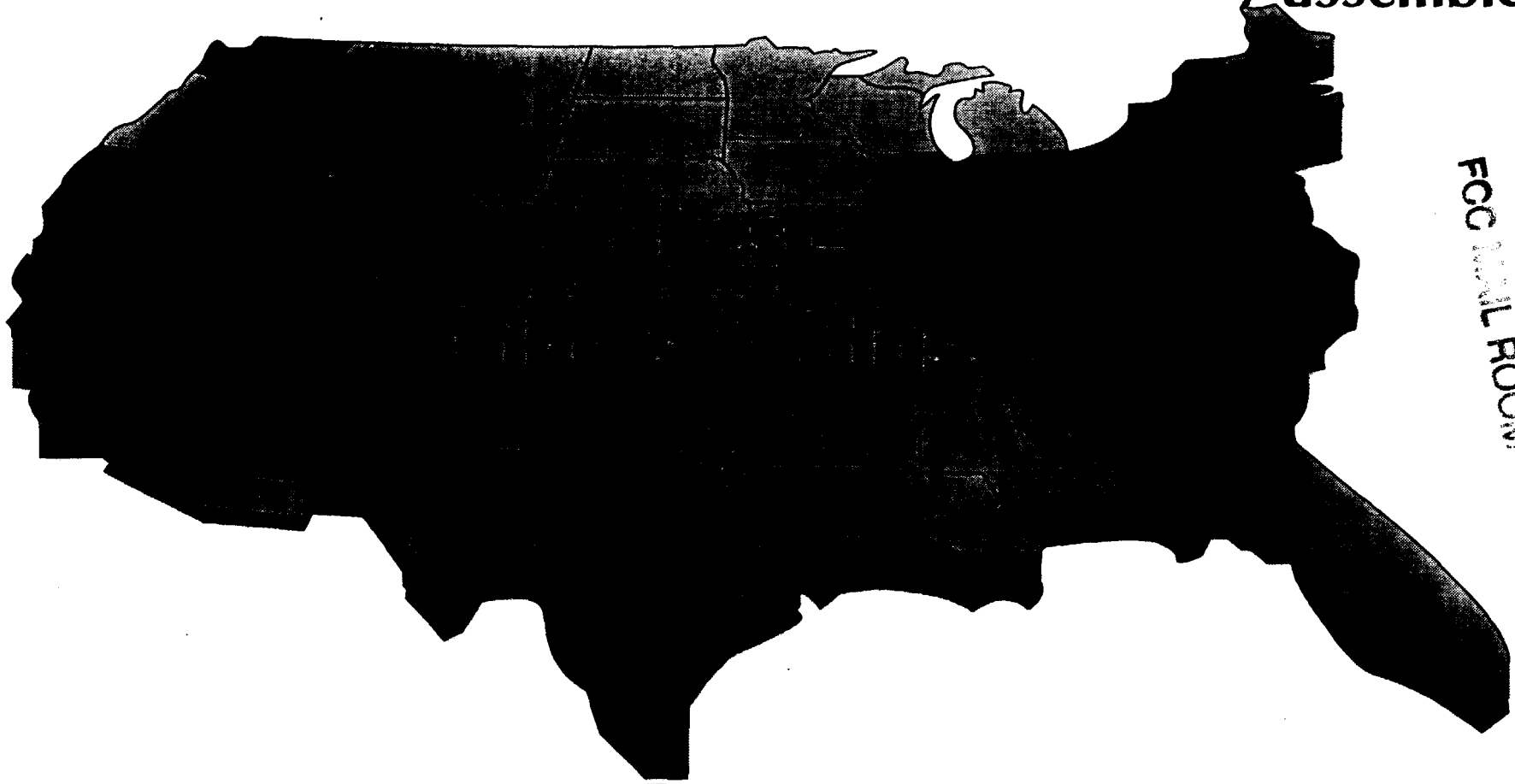
Dated: July 11, 1996

U.S. Television Manufacturing Sites

[redacted] → 13 states

[redacted] → 32 companies

* 27 manufacture
* 7 assemble



Approx. 30,000 employees

CEMA 2/96

U.S. Television Manufacturing Sites

EIA Research Center

1996

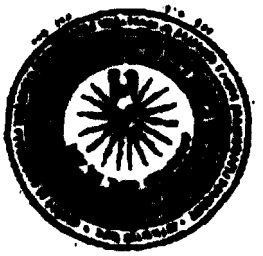
COMPANY	CITY	STATE	EMPLOYEES	PLANT TYPE	CAPACITY	ANNUAL PRODUCTION/ PRODUCTS	EXPORT	LOCATION
American Video Glass* (Sony/ Corning)	Pittsburgh	PA	400* *scheduled start-up mid-1996	Manufacture*	NA	TV Glass	NA	NA
America Kotobuki Electronics Industries Inc.	Vancouver	WA	275	Manufacture	500,000	TV/VCR Combinations	Yes	Canada
BMC	Cortland	NY	500* *scheduled to become 800 employees; 38 million output by 1997	Manufacture	23,000,000*	TV Aperture Masks	NA	NA
Corning Asahi Video Products	Corning	NY	NA	Manufacture	NA	Television Glass	Yes	NA
Corning Asahi	State College	PA	NA *scheduled expansion to 6 million mid-1996	Manufacture	5,000,000*	Television Glass	NA	NA
Hitachi	Greenville	SC	550	Manufacture	800,000	Television Picture Tubes	Yes	NA
JVC	Elmwood Park	NJ	250	Manufacture	400,000	Television Receivers	Yes	Canada, Central America South America Europe, Canada

COMPANY	CITY	STATE	EMPLOYEES	PLANT TYPE	ANNUAL PRODUCTION/ CAPACITY	PRODUCTS	EXPORT	LOCATION
Matsushita	Troy	OH	675	Manufacture	NA	Television Picture Tubes	Yes	NA
Mitsubishi Consumer Electronics	Braselton	GA	450	Manufacture	400,000	Television Receivers	Yes	Canada, Mexico
Mitsubishi Consumer Electronics	Santa Ana	CA	500	Assembly	150,000	Rear-Projection Big-Screen Television	Yes	Mexico, Canada
Orion Electric America	Princeton	IN	330	Assembly	NA	Television Receivers	Yes	NA
Philips Consumer Electronics Co.	Arden	NC	400	Manufacture	2,000,000	Plastic Television Cabinets	No	
Philips Consumer Electronics Co.	Jefferson City	TN	400-700	Manufacture	300,000	Wood Television Cabinets	No	
Philips Display Components	Ottawa	OH	1,600	Manufacture	5,000,000	Television Picture Tubes	Yes	Hong Kong, Australia, Brazil, Mexico, Canada
Philips Consumer Electronics Co,	Greenville	TN	2,200	Manufacture	1,500,000	Television Receivers	Yes	Canada, Mexico, Tawain Japan
Sanyo Manufacturing Corporation	Forrest City	AR	500	Assembly	1,200,000	Television Receivers	Yes	Canada, Mexico

COMPANY	CITY	STATE	EMPLOYEES	PLANT TYPE	ANNUAL PRODUCTION/ CAPACITY	PRODUCTS	EXPORT	LOCATION
Sharp Manufacturing Company of America	Memphis	TN	1,050	Assembly	1,250,000	Television Receivers Television Glass	Yes	Canada, Mexico, Europe
Sony Electronics Inc. Pittsburgh Manufacturing Center	Pittsburgh	PA	250	Manufacture	80,000 350,000	Large-Screen Rear-Projection Televisions Television Picture Tubes	No	
Sony Engineering and Manufacturing Company of America	San Diego	CA	2,000	Assembly	500,000	Television Sets	Yes	Canada, Taiwan, Japan, South America
Sony Engineering and Manufacturing Company of America	San Diego	CA	2,000	Manufacture	2,000,000	Cathode Ray Tubes	Yes	Canada, Taiwan, Japan, South America
Tatung	Long Beach	CA	200	Assembly	20,000	Television Receivers	Yes	Canada, Mexico
Techneglas, Inc.	Columbus	OH	1,000	Manufacture	13,000,000	Television Glass	Yes	Canada
Techneglas, Inc.	Pittston	PA	1,325	Manufacture	8,500,000	Television Glass	Yes	Canada
Thomson Consumer Electronics	Circleville	OH	1,000	Manufacture	10,000,000	Television Glass	No	

COMPANY	CITY	STATE	EMPLOYEES	PLANT TYPE	ANNUAL PRODUCTION/ CAPACITY	PRODUCTS	EXPORT	LOCATION
Thomson Amer. Consumer Electronics	Bloomington	IN	1,600	Manufacture	3,500,000	Television Sets	Yes	Latin
Thomson Consumer Electronics	Indianapolis	IN	900	Manufacture	2,000,000	Plastic Television Cabinets	Yes	Germany
Thomson Consumer Electronics	Marion	IN	2,300	Manufacture	4,000,000	Television Picture Tubes	Yes	Europe, Latin America
Thomson Consumer Electronics	Mocksville	NC	650	Manufacture	540,000	Wood Television Cabinets	No	
Thomson Consumer Electronics	Scranton	PA	1,250	Manufacture	2,500,000	Television Picture Tubes	Yes	Europe, Latin America, Asia
Toshiba America Consumer Products, Inc.	Lebanon	TN	705	Assembly	1,500,000	Television Receivers		Canada, South America, Japan, Taiwan
Toshiba Display Devices Inc.	Horseheads	NY	1,300	Manufacture	1,000,000	Color Television Picture Tubes	Yes	NA
Zenith Electronics Corp.	Melrose Park	IL	3,200	Manufacture	4,500,000	Television Picture Tubes Wide-Sceren TVs	Yes	Far East, Europe

CWA



For Immediate Release
October 17, 1996

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FCC Delay Threatens U.S. Jobs

Three Union Leaders Urge FCC Adoption of HDTV Standards

Washington, DC – Three union leaders warn that if the Federal Communications Commission (FCC) does not adopt national standards soon for the digital television industry, thousands of high-tech American manufacturing jobs will be lost. "The new digital television technology that is available to boost high-tech manufacturing in this country and provide high-quality entertainment and information is not being swiftly encouraged. This lack of foresight is leaving another opening for high-tech foreign competitors to fill the void in American markets," the union leaders warned.

In a letter to Vice President Gore, union presidents from the International Brotherhood of Electrical Workers (IBEW), Communications Workers of America (CWA) and the International Union of Electronic Workers (IUE) wrote in support of the speedy adoption of the digital video technology standards agreed to by the Grand Alliance – the group of computer industry manufacturers and consumer electronic broadcasters responsible for studying the emerging technology.

"The Grand Alliance ATSC Standard should be adopted now. The delays already incurred since the standard was recommended last November by the FCC Advisory Committee have already cost American business both credibility and economic opportunity," the letter stated.

"We want America to retain its technological leadership in digital video technology as well as to foster its valuable export opportunities. If we do not adopt these transmission standards now, other countries competing in this market will set the industry standard and the American market will not only be dealt an embarrassing blow, it will also lose thousands of high-tech job opportunities."

"Adopting these standards, however, would sustain our technological pre-eminence, harness further creative power in the U.S. and create untold export capabilities for manufacturing and software products and services."

– more –

"Thousands of our members manufacture the finest television receivers in the world at numerous assembly and component facilities throughout the United States. Two of our major employers, Thompson and Philips, have pledged in writing to manufacture HDTV receivers in the U.S. if the FCC sets a transmission standard."

"Our members also work by the thousands in the free broadcasting industry. They have an equally large stake in the debate over transmission standards and channel allocation of new broadcast channels for digital television. It is estimated that as stations convert to digital, billions of dollars will be invested by manufacturers and broadcasters which will create tens of thousands of new 'high wage - high tech' quality jobs beginning in 1997!"

"If the FCC does not adopt this new standard, the broadcasting medium Americans rely on for information, education and entertainment will be dealt a devastating setback and all Americans will suffer from the inevitable diminution of a key media competitor mired in the analog world. Our country will fall behind in the larger digital world."

Conservative economists and some in the business community have been critical of any FCC action, claiming that the marketplace should be allowed to determine standards for digital television. However, the union leaders stressed that "government is occasionally needed to set the framework so that innovation can occur within the private sector. With established government standards, investors gain the confidence they need to invest, so that, in turn, consumers can enjoy better products at reasonable prices and new jobs can be created."

– 30 –

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS
AFL-CIO

COMMUNICATIONS WORKERS OF AMERICA/NABET
AFL-CIO

INTERNATIONAL UNION OF ELECTRONIC, ELECTRICAL, SALARIED, MACHINE AND FURNITURE WORKERS
AFL-CIO

October 8, 1996

The Honorable Albert Gore, Jr.
Vice President of the United States
Old Executive Office Building
Washington, D.C. 20501

Dear Mr. Vice President:

Our three unions, the IBEW, CWA and IUE, have been closely involved in the development of, and now debate over, digital television and have a tremendous stake in the outcome. In addition, the AFL-CIO is on record supporting the proposed Grand Alliance transmission standard proposed for adoption by the FCC (copy enclosed).

As you know, tens of thousands of our members manufacture the finest television receivers in the world at numerous assembly and component facilities throughout the United States, including the Philips plant in Greenville, Tennessee (the second largest television plant in the world).

Two of our major employers, RCA and Philips, have pledged in writing to manufacture HDTV receivers in the U.S. if the FCC sets a transmission standard.

Our members also work by the thousands in the free broadcasting industry. They have an equally large stake in the debate over transmission standards and channel allocation of new broadcast channels for digital television, including HDTV. It is estimated that as stations convert to digital, billions of dollars will be invested by manufacturers and broadcasters which will create tens of thousands of new "high wage - high tech" quality jobs beginning in 1997!

Mr. Vice President, we applaud your advocacy of government's limited role in the free market; government is occasionally needed to set the framework so that innovation can occur within the private sector. From such action, investors get the confidence they need to invest, so that, in turn, consumers can enjoy better products at reasonable prices and new jobs can be created. We believe that the matter of digital HDTV transmission standards fits squarely within this philosophical context and that the FCC should adopt the full standard and mandate its exclusive use by broadcasters.

Over nine years ago, a Republican-led FCC challenged our private sector to invent an advanced television broadcasting system that would be superior to the Japanese satellite-only, analog HDTV system. Since then, four FCC Chairmen from both political parties have fostered this design, guided and overseen its development, and anticipated its adoption as the new broadcast standard for America. What ensued was an unprecedented peacetime effort by our finest scientists and business people in the consumer electronics, broadcasting, cable, production and computer industries to author a transmission standard for HDTV.

The resulting Grand Alliance system proved that the ATSC digital television standard unquestionably represents the finest digital video technology on earth and will provide consumers with universal access to the digital age, boosting fulfillment of the promise of the National Information Infrastructure and, yes, the Internet! The ATSC standard provides for full interoperability with computers and information industry transmission standards and leaves enormous room for future innovation and augmentation by all involved in the future television business. This standard will easily allow software providers to offer a dazzling array of future products and services to the American consumer.

In short, the proposed ATSC Standard is technologically superior to any other in the world, computer-friendly and flexible to accommodate future innovation.

We believe very strongly that the FCC should approve this ATSC Standard now. Frankly, the delays already incurred since this standard was formally recommended last November by the FCC Advisory Committee have already cost American business both credibility and economic opportunity. We want America to retain its technological leadership in digital video technology and as well as valuable export opportunities. As you know, Mr. Vice President, Canada and South America are ready to adopt the ATSC Standard pending U.S. government adoption. That could effectively guarantee that the U.S. standard could become a world standard which would be fully competitive with any alternatives now under development elsewhere. This would be a huge accomplishment that would sustain our technological pre-eminence, harness further creative power in the U.S. and create untold export capabilities for manufacturing and software products and services. The alternative would be to suffer the potential embarrassment of adopting, de facto or de jure, a lesser digital standard developed elsewhere. And, of course, many thousands of job opportunities would be forfeited.

If the FCC were to choose not to adopt this standard, the broadcasting medium on which most Americans rely for information, education, and entertainment would be dealt a devastating setback and all Americans would suffer from the inevitable diminution of a key

media competitor mired in the analog world. Our country would fall behind in the larger digital world. Many thousands of job opportunities will be lost and the consumer will lose the full benefits of the new digital television.

Mr. Vice President, we urge the Administration to press for adoption of the full ATSC Standard as soon as possible. We would be pleased to meet with you to discuss this important public policy matter.

Sincerely yours,

J.J. Barry Morton Bahr William Bywater

cc: Chairman Reed Hundt
Commissioner Quello
Commissioner Chong
Commissioner Ness
John J. Sweeney, President, AFL-CIO

HDTV—
An American Technology Success

I. INTRODUCTION

Today, the United States is on the threshold of bringing broadcast television into the digital age. Our world-leading digital high-definition television system (HDTV) represents a new era in broadcast communications.

As the first new television standard since 1952, HDTV will bring about remarkable improvement in the technical quality of television, and will provide numerous other services and applications to American citizens. HDTV's high resolution display and flexible data delivery capability make it the ideal backbone for the U.S. information infrastructure, and will create thousands of high-skill, high wage jobs.

To realize these benefits, the Federal Communication Commission (FCC), Congress, and the Administration must move quickly to promote the rapid introduction and ubiquitous availability of HDTV.

II. THE HISTORY AND DEVELOPMENT OF HDTV

In the late 1980's, it was taken for granted by U.S. policymakers that Europe and Japan were building an insurmountable lead in the development of HDTV — the advanced, high resolution broadcast technology that would redefine television for the next century. Advanced television was viewed as yet another critical technology leaving America's shores, taking with it thousands of well-paid, advanced-skill jobs.

In response, the FCC under President Reagan established the Advisory Committee on Advanced Television Services (ACATS). Its mission was to assist in the adoption of an HDTV transmission standard and promote the rapid implementation of HDTV in the U.S.

With the encouragement of Congress and the Administration, the Advisory Committee established an open competition: anyone could submit a proposed HDTV system, and the best system would be selected as the new television standard for the United States. To ensure the most rapid transition to HDTV, the FCC also promised that every television station in the nation would be temporarily loaned an additional channel of broadcast spectrum.

At the time, it was taken for granted that the winning proposal would come from a foreign entrant and would feature the same analog technology currently used in television and radio broadcasts. However, American laboratories in the late 1980's made a revolutionary breakthrough: they discovered how to transmit television digitally, using the same high-speed language of 1's and 0's that controls computers, compact disc players, telecommunications equipment; and other consumer electronics.

As a result, after an arduous eight-year process, the U.S. had leapfrogged Europe and Japan in the development of a world-leading all-digital HDTV system. The top proposals were combined into a "best of the best" system by the so-called "Grand Alliance" of remaining proponents (AT&T, General Instrument, MIT, the David Sarnoff Research Center, Thomson Consumer Electronics, Phillips Consumer Electronics, and Zenith).

1995 marked the successful culmination of this bipartisan effort. After a massive cross-industry evaluation process, in November of this year the ACATS officially recommended the Grand Alliance System to the FCC as the new U.S. television standard.

III. CAPABILITIES OF THE GRAND ALLIANCE HDTV SYSTEM

As the first new television transmission standard in over 40 years, the Grand Alliance HDTV system offers capabilities that were unimaginable when FCC selection process began just eight years ago.

HDTV offers extraordinarily crisp and clear video performance, providing approximately six times the spatial resolution of current NTSC sets. With the pictorial acuteness of digital transmission, "ghosts" and other annoying broadcast picture artifacts will become anachronisms.

The Grand Alliance system supports two formats of video display: "interlaced," such as used by current televisions, and "progressive," as employed by computers. This dual-mode capability allows HDTV to function interoperably with computer systems, CD-ROMs, and other multimedia applications.

HDTV also brings CD-quality sound. The Grand Alliance system incorporates Dolby AC-3 technology, which is the same digital surround-sound used in movie theaters. This multi-channel digital audio system is suitable for inexpensive televisions with built-in speakers, as well as for more expensive home theater systems.

In addition, the Grand Alliance system can be used to transmit massive amounts of digital data to the home. HDTV receivers will be able to pick up electronic newspapers, stock prices, two-way paging systems, or interactive games just as easily as the Super Bowl or the Movie of the Week.

Finally, HDTV offers broadcasters and consumers unprecedented flexibility in the use of video, audio, and data. The Grand Alliance system supports multiple formats, frame rates, and production standards. Broadcasters and program producers will be free to select the format and frame rate that provides the best picture quality for a given use. Through digitalization, the Grand Alliance has brought television into the information age.

IV. THE BENEFITS OF HDTV

1. Free, over the Air Broadcast Television Will Remain Commercially Viable

Free, over the air broadcast television serves a critical and unique role in our society. Most Americans rely on free broadcast television as their primary source of local and national news and public affairs information. Broadcast television is the only non-subscription transmission medium which serves vast, sparsely-populated areas of our nation. It is society's "great equalizer" of information access.

The ability of television broadcasters to upgrade from analog to digital may well determine whether free, over the air television will continue to be provided to the American public. Broadcast TV will only survive if it can remain competitive with other delivery media in the years to come. HDTV can be delivered easily by subscription- based mediums such as cable and satellite, as well as by fixed media such as tapes and discs. If over the air broadcasters cannot transition to digital, then free, over the air television will rapidly become isolated as a technically inferior service with an uncertain future.

The temporary, cost-free loan of a second channel is essential if the broadcasters are to transition to a digital system. Broadcasters cannot offer both analog and digital transmissions over their current channel. Nor can broadcasters commence digital transmissions over their current channel without instantly blacking out the more than 200 million existing analog television sets. To upgrade to digital, broadcasters will temporarily need to broadcast on two channels, one analog and one digital.

This is not a "give away" of spectrum, nor does it allow the broadcasters to initiate an additional service. Instead, it is a one-for-one exchange of channels, with one channel to be returned to the government when the transition is complete.

A spectrum loan recognizes that, for broadcasters, the transition to digital will be expensive. The broadcast community has already invested a collective $500 million in the development of HDTV. Now, broadcasters will absorb millions in additional costs for new signal distribution and switching equipment, transmitters, programming development and procurement, and related costs.

During the transition, each broadcaster will be required to provide free, over the air service on an additional channel without increasing its audience or gaining any additional revenue. The economics of this capital outlay will give broadcasters a powerful economic incentive to make a rapid transition to a single digital channel, while returning the other channel to the government as soon as feasibly possible

Only by enabling free over the air broadcasters to implement HDTV can we guarantee the long term viability of free over the air broadcasting, and ensure that the entire American public — rural and urban, rich and poor — will have the opportunity to participate in the services and technologies associated with the digital age.

2. American Consumers Will Gain Access to the World's Most Advanced Television System, along with the Benefits of the National Information Infrastructure (NII)

Consumers will initially be attracted to HDTV by its stunning improvements in video and audio quality. However, the flexible data delivery capacity and high-resolution display inherent in the Grand Alliance system will permit the enjoyment of a wide variety of information and entertainment services to be received into the home.

While the NII has received significant publicity in recent years, its benefits have up to now been reserved for a relatively small segment of our population. Now, through digital television, American homes will have a broadband, high-resolution, interactive device that every TV viewer can operate. With entertainment as a catalyst, HDTV will finally bring the NII to the American living room.

A consumer market for HDTV will cover the costs of further development of information infrastructure applications in health care, education, and other areas of need. As the NII advances, consumers will naturally demand more sophisticated televisions and devices. At last, the long-standing promise of the NII will become a reality for the vast American public.

3. The Government Will Realize Significant Revenue Through the Auction of Repackaged, Contiguous Channels Relinquished by the Broadcasters

Allowing broadcasters free use of the digital channels will encourage an expedited transition to HDTV, thus enabling the rapid return of one channel to the government for auction.

These returned channels could then be repacked into nationwide, contiguous blocks. These blocks of spectrum would bring significantly greater market value than the auction of local, non-contiguous channels, such as those designated to be loaned to broadcasters for the digital transition.

An auction of the returned and repackaged spectrum facilitates the best possible results: significant revenues would be realized by the government, and at the same time broadcasters would have invested the sums needed to make HDTV a reality.